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University of Dayton Names Dilip Ballal as First Hans von Ohain Distinguished Professor

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NEWS RELEASE

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DAYTON, Ohio — He says it's a "dream-come-true type thing."

When Dilip R. Ballal was a boy in India, he had four heroes: Wilbur and Orville Wright, Frank Whittle and Hans von Ohain. All pivotal figures in aviation, the four were natural idols for a youngster with aeronautic engineering in his future.

The Wright Brothers conquered flight. Whittle and von Ohain, working independently in the 1930s and 1940s, developed jet engine technology.

Ballal, now professor of mechanical and aerospace engineering at the University of Dayton and leader of the combustion and fuels group in the UD Research Institute, has been named the first Hans von Ohain Distinguished Professor in the School of Engineering at the University of Dayton. Ballal will be formally installed Oct. 7.

He was destined to meet two of his heroes and honored to consider one a colleague, he says.

As a young professional, Ballal was invited in 1982 to give a talk at the University of Dayton Research Institute. In the audience, listening to Ballal's lecture on jet engine combustion, was von Ohain, then a UD mechanical engineering professor and a senior researcher at UDRI.

"Hans was smiling in the audience, he was kind of delighted," remembers Ballal. "Combustion was a key problem and of great concern when he was developing his engine." In 1983, Ballal was asked to join the University, where he and von Ohain were colleagues until the senior researcher's retirement in 1992. Von Ohain died March 13, 1998, in Melbourne, Fla.

"Hans von Ohain was an eminent engineer, a very inspirational teacher, an ingenious inventor and an international leader," says Brother Raymond L. Fitz, S.M., president of the University. "It's truly fitting that, on the 60th anniversary of Hans proving that jets would fly, we celebrate his accomplishments by honoring one of his fellow engineers, a man who also shines in the research lab, in the classroom and in our University community."

Ballal has more than 30 years of research experience in gas turbine combustion, fuel

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technology, fluid mechanics, heat transfer and laser diagnostics. His experience spans academia and industry. He is the principal investigator for a five-year, $15 million U.S. Air Force contract on advanced, integrated fuel-combustion systems and directs the work of 20 researchers. His team at Wright Patterson Air Force Base also includes up to six UD students, generally a mix of undergraduates and graduate students.

The UD student who holds the General Electric/von Ohain graduate engineering fellowship will also work with Ballal.

"Dilip Ballal will have the opportunity to mentor students in the same way that Hans von Ohain mentored him, and that is part of the legacy of the University of Dayton and UD's emphasis on top-notch research," says John Geiger, senior vice president for academics and provost.

Von Ohain and Whittle received many awards for their independent invention of jet engine technology, including the prestigious Charles Stark Draper Medal, referred to as the Nobel Prize of engineering. Whittle, working in England, got the first patent in 1932 and was the first to demonstrate a working prototype in 1937 while von Ohain, working in Germany, was the first in the air with a 1939 flight. Von Ohain became a naturalized U.S. citizen after World War II.

In addition to his association with von Ohain, Ballal also had connections to Frank Whittle, who was later knighted for his contributions. One of Ballal's uncles, Waman Zadkar, the first engineer in the family, was selected by Whittle in the early 1950s for training in jet engine maintenance. Ballal used to spend summers with his uncle, who was chief maintenance engineer for British Overseas Airways Corporation (BOAC, now British Airways) in Calcutta, where he would "watch and wonder" at high-speed jet landings.

"I met him and spent time with him," Ballal says of his encounters with Whittle. "I knew both of these men, but of the two, Hans knew me."

Gordon Sargent, who serves as interim director of UDRI as well as vice president for graduate studies and research and dean of the graduate school, says Ballal's contributions extend far beyond the University. "The importance of this specific research is that it relates to important work at Wright Patterson Air Force Base, which is one of the main federal research establishments for the Air Force in the country. Because this research is being done by someone of the caliber of Dilip, who has a national and international reputation, it brings a lot of recognition to the university and to the Miami Valley nationally and internationally. We get the benefit of an enhanced reputation for high-caliber research because of his capabilities," he says.

For the University, Sargent says, "People of Dilip's caliber act as mentors for students

and junior faculty, which is important in building an excellent research program in a focused area."

Ballal graduated with a bachelor of science degree in mechanical engineering in 1967 from the College of Engineering in Bhopal, India. He earned a master of science degree in 1968 and his doctorate in mechanical engineering in 1972 from the Cranfield Institute of Technology in Cranfield, England, which also awarded him a doctor of science degree in 1983 for his "original and outstanding research contributions." Prior to coming to UD, Ballal held positions at the General Motors Research Laboratories, Purdue University and the Cranfield Institute of Technology.

He received the National Energy Systems Award in 1993 from the American Institute of Aeronautics and Astronautics (AIAA) for outstanding research in gas turbine combustion. He was elected an American Society of Mechanical Engineers (ASME) fellow in 1992 and an AIAA fellow in 1993. He is a member of the board of directors of ASME-International Gas Turbine Institute, the International Combustion Institute (Central States Section) and NASA combustion research and development committee.

"It is very fitting that in the city that gave birth to aviation we honor one of aviation's great pioneers, Hans von Ohain, by establishing a Distinguished Professorship in his name," says Blake Cherrington, dean of the School of Engineering at UD. "I am very pleased that the first Hans von Ohain Distinguished Professor is Dilip Ballal, a person who has carried on the von Ohain legacy with his own internationally acclaimed contibutions to aerospace propulsion."

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